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US 4686554 A US 4583122 A Document ID Kind USPAT 1987081 Sourc USPAT 1986041 11 Issue 08 Page s Imaging display device converter Photoelectric Title collector region, a p base region disposed contiguous to the n.sup.capacitor constituted by the base region, an electrically insulating and a first electrode connected to the emitter region; and a storage region, an n.sup.+ emitter region disposed contiguous to the base region, or n.sup.+ collector region an n.sup.- region disposed contiguous to the example of the photosensor element comprising: a transistor including an n substrate into electric signals, and a large number of electrooptic of the substrates and which convert light signals from outside the one disposed in a large number between the substrates and in adjacency to one An imaging display device characterized by comprising a pair of transparent A photoelectric converter comprising a photosensor element, typical photoelectric elements and in a predetermined relationship of elements which are disposed between the other substrate and the respective predetermined interval therebetween, photoelectric elements which are substrates which are arranged in opposition to each other with a region disposed contiguous to Abstract Current OR 257/443 348/792 Retrieva Classif 257/291 ; 348/294 Current XRef 396/373 Ohwada, Junichi , et al. Ohmi, Tadahiro , et al. Inventor U X Ø C 'n ۳ N ω 4 U

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| | | | | Photoelectric converter | | - | | .• | | | | | Photoelectric converter | | | | itte |
| region disposed contiguous to | capacitor constituted by the base region, an electrically insulating | and a first electrode connected to the emitter region; and a storage | region, an n.sup.+ emitter region disposed contiguous to the base region, | collector region, a p base region disposed contiguous to the n.sup | or n.sup.+ collector region an n.sup region disposed contiguous to the | example of the photosensor element comprising: a transistor including an n | A photoelectric converter comprising a photosensor element, a typical | | region disposed contiguous to | capacitor constituted by the base region, an electrically insulating | and a first electrode connected to the emitter region; and a storage | region, an n.sup.+ emitter region disposed contiguous to the base region, | collector region, a p base region disposed contiguous to the | or n.sup.+ collector region an n.sup region disposed contiguous to the | example of the photosensor element comprising: a transistor including an n | A photoelectric converter comprising a photosensor element, a typical | Abstract |
| | | | | 348/314 | | | | | | | | | 257/462 | | | | OR |
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| | | | | 257/290 (; 257/443; ; 257/462; | | | | | | | _ | , I | 257/465 Ohmi, ; 257/513 Tadahir ; 327/515, et al | - | | | XRef |
| | | | ı | Ohmi, Tadahiro , et al. | | | | | | | | | Ohmi, Tadahiro , et al. | | | | Inventor |
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5 US 4954895 A US 4942474 A Document Ħ Kind Codes USPAT 1990090 17 USPAT Sourc 0 1990071 23 Issue Date Page s conversion elements substrate semiconductor integrated at a surface of a photoelectric including imaging device Solid-state photo-sensitivity elements arranged to provide improved conversion elements and photo-electric having Solid-state imaging device charges which are stored in the photodiodes in accordance with other circuit incident Title stored in the photodiodes in accordance with the incident lights 348/301 in a transistor constituting part of theses active elements is provided in the MOS type transistors, connected to each of the photodiodes. A MOS type predetermined order. This reading means includes active elements, such as matrix configuration and reading means for reading out signal charges conversion elements) formed a surface of a semiconductor substrate in a A solid-state imaging device has a plurality of photodiodes (photoelectric light, in a predetermined order, is disclosed in which device the read-out transistor connected to a photodiode, part of the active elements are used means is made up of a plurality of active elements such as a MOS conversion elements (for example, photodiodes) arranged on semiconductor reading out signal substrate so as to form a matrix and read-out means for A solid-state imaging device including a plurality of photoelectric as a pixel amplifier for path of the transmitting Abstract 348/301 Current or Retrieva Current Classif 257/292 Akimoto, ; 348/273 Hajime ; 348/310, et al. 348/241 Akimoto, 348/241 Hajime ; 348/310 , et al. Inventor d ß a М μ N . ω 4 σ

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| | - | | | | · · | Photoelectric converter with phototransistor and refresh means | | | | | | | transferring signal electric charges therethrough | pairs of switching MOS transistors for | imaging device having series-connected | 0 | | 71C16 | | |
| | | region disposed contiguous to | capacitor constituted by the base region, an electrically insulating | and a first electrode connected to the emitter region; and a storage | region an n.sup.+ emitter region disposed contiguous to the base region, | the the | or n.sup.+ collector region an n.sup region disposed contiguous to the | example of the photosensor element comprising: a transistor including an n | A photoelectric converter comprising a photosensor element, a typical | in a semiconductor provided ahowathasamiconductorsuhstrata | formed in the semiconductor substrate and a second MOS transistor formed | includes a series connection of a first MOS transistor switching element | signal lines by scanning a plurality of switches. Each of the switches | individual light receiving elements are sequentially read out through | | formed in a semiconductor substrate. Signal electric charges generated by | A solid-state imaging device has a plurality of light receiving elements | Abstract | | |
| | | | | | | 257/462 | ····· | | | | | | ů . | 348/302 | | | ÷ . | OR | _ | |
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| | | | | | - | 250/208.1 Ohmi, Tadahi; 257/443, et a | | | | | | | | 348/299 | , | | | XRef | | |
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| | Ferroelectric thin film material, method of deposition, and devices using same | Holographic operating optical apparatus | Title |
| * | A ferroelectric device that comprises a polarizing thin film of BaMF.sub.4 deposited on a substrate. Ba is barium, M is one of the metals of the group consisting of iron (FE), manganese (Mn), cobolt (CO), nickel (Ni), The substrate is silicon, sapphire, or gallium arsenide. A non-volatile NDRO and DRO memory cell and methods for depositing the thin film. A | by a light which which the truct mage | Abstract |
| | 257/295 | 359/6 | OR |
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| | 257/314 Lampe, ; 361/321. I Donald ; 365/145 R. ; 365/156, et al ; 365/176 | 348/40 ; 349/1 ; 349/172 IW ; 349/172 Ta ; 349/25 Ta ; 359/561 ; 706/40 | XRef |
| | Lampe, Donald R, et al. | Iwaki, Tadao , et al. | Inventor |
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| | | | | 76 | ***************************** | | | | | | | *************************************** | 21 | | | | | Page |
| T | | | | Photoelectric converter with scanning circuit | | · | | | | | | | Three dimensional CCD image sensor | | | | | Title |
| region disposed contiguous to | capacitor constituted by the base region, an electrically insulating | and a first electrode connected to the emitter region; and a storage | region, an n.sup.+ emitter region disposed contiguous to the base region, | collector region, a p base region disposed contiguous to the n.sup | or n.sup.+ collector region an n.sup region disposed contiguous to the | example of the photosensor element comprising: a transistor including an n | A photoelectric converter comprising a photosensor element, a typical | andrecellulnarealonsand | each of said plurality of N | interval; a desired area of a charge transfer path being formed between | formed opposite to each other being configured in sequence at a desired | light receiving regions and said plurality of N type VCCD regions are | receiving regions; a series of arrangement that said plurality of N type | N type VCCD regions being formed under said plurality of N type light | receiving regions being formed on a two-dimensional plane; a plurality of | A three-dimensional CCD image sensor comprising a plurality of N type light | | Abstract |
| | | | | 257/291 | | · | | | ******* | | * | ••••••••••••••••••••••••••••••••••••••• | £ 257/233 | ······································ | <u>α</u> | | | Current OR |
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| | | 0 | | Ohmi, Tadahiro | | | | | | | | | Lee, Sung M. | ••••••••••••••••••••••••••••••••••••••• | | | | Inventor |
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| Integrated AFM sensor Integrated AFM sensor Method of measuring a thickness of a multilayered sample using ultraviolet light and light with wavelengths longer than ultraviolet ultraviolet with a manufacture of the sample using the sample usin | Title |
| An integrated AFM sensor includes a cantilever which has two beams cantilever which has two beams extending from a support portion. The beams are integrated with each other at their ends to form a triangular free end, and a probe having a sharp distal end is arranged at the processive layer, and a probe stacking a passivation layer, a plezoresistive layer, and a silicon layer. Electrodes electrically connected to the plezoresistive layer, and a silicon layer because obtained and fourier transformed to derive frequency converted spectrum. A power spectrum is obtained from the frequency converted spectrum to lidntify a peak which expresses interference caused by a silicon film. An approximate value d2' of the film thickness of the silicon film is calculated based on the peak position. After filtered by filtering, the frequency converted spectrum is reverse fourier transformed to obtain spectral to obtain spectral | Abstract |
| 250/559 279/105 | Current OR |
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| ; 250/306 ; 250/307 ; 356/357 | Current |
| Toda, Akitoshi , et al. Horie, Masahiro | Inventor |
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| | vi | | | Image signal processing device | | | | | | | 5. 4. | ¥. | X-ray imaging system and solid state detector therefor | | | | Title |
| as the quantized error data by subtractors. An error data synthesizing | the DCT coefficients output from the DCT processing circuit are determined | reproduced. The differences between the reproduced DCT coefficients and | inverse quantization processing circuit, the DCT coefficients are | processing circuit and an inverse quantization processing circuit. In the | quantization processing circuit, then input to a Huffman encoding | stored in an image memory. The DCT coefficients are quantized by a | A DCT processing circuit outputs DCT coefficients based on image data | | a silicon-on-insulator | metallization layers of the sensor. An alternative embodiment incorporates | registers and bond pads superimposed over the pixel array in the upper | preferably utilizes 4-side abuttable sensor arrays having imbedded shift | similar to a CCD array to shift data from the array. The detector | circuits. The pixel architecture of the detector utilizes a technique | circuits, and a ceramic layer. The ceramic layer overlays the processing | An x-ray detector includes a scintillator, a sensor array, processing | Abstract |
| | | | | 358/426 | | *************************************** | | | | , | 500 | *************************************** | 250/370 | | - | | Current OR |
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| | | | 382/250 382/251 382/252 | ; 348/405 ; 358/430 ; 358/432 ; 358/432 ; 382/248 | 348/403 | | | | | | | | 250/366 ; 250/370.0 | | | | Current |
| | | | | 348/405 358/430 358/432 Abe, 382/248 Nobuaki | | | | | •••••• | , | | | Cox, John D. , et al. | | | | Inventor |
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18 17 US 5582640 A US 5563431 A Document Kind Codes USPAT USPAT Sourc 0 r 1996100 70 1996121 154 Issue Date Page s Photoelectrical converter with refresh means Semiconductor substrate such that an average device and its inter-atomic distance of main fabricating method constituent Title crystallization energy is applied to the amorphous thin film to perform inter-atomic distance of the elements in single crystal, and element of the amorphous thin film is 1.02 times or more of an average A single crystal and a polycrystal having an excellent crystal quality and conductivity type and disposed electrically connectable to an growth at low temperatures. An amorphous thin film is deposited on circuit including a capacitive load, and a second main electrode region of form a single crystal. In another solid phase providing a highly reliable semiconductor device are formed by semiconductor of a second conductivity type different from the first comprising a transistor including a control electrode region having a semiconductor of operation and refresh operation. The photoelectric converter includes a the second conductivity type, a first conductivity type, first main electrode region operation, readout A photoelectric converter is adapted for an accumulation solid phase growth to thereby Abstract a 117/8 Current OR 257/291 Retrieva 1 Current Classif ; 438/166 Okada, ; 438/481 Takako ; 438/486, et al. ; 257/292 Ohmi, ; 257/443 Ohmi, ; 257/446 Tadahiro ; 257/448, et al. ; 307/117 117/930 250/208. Inventor d (C) C P Н N ω 4 Çī

20 19 US 5642129 A US 5604364 A Document Kind Codes USPAT 1997062 18 USPAT 8 1997021 69 Sourc O Issue Page 8 Photoelectric converter with vertical output Color sequential display panels lines ' Title active matrix display panel Color stripes are used to generate sequential selectively actuating pixel electrodes in the active matrix display includes a random access data scanner and random access spec scanners. By circuitry using single crystal silicon technology. The control electronics electrodes. The control electronics is fabricated with the active matrix A color active matrix display system allows random access of pixel and a first electrode connected to the emitter region; and a storage region, an n.sup.+ emitter region disposed contiguous to the base region, collector region, a p base region disposed contiguous to the n.sup.or n.sup.+ collector region an n.sup.- region disposed contiguous to the displayed on the region, compressed video information can be directly capacitor constituted by the base region, an electrically example of the photosensor element comprising: a transistor including an \boldsymbol{n} A photoelectric converter comprising a photosensor element, typical region disposed contiguous to insulating color systems to produce Abstract 345/100 Current OR 257/291 Retrieva Classif 250/208.1 ; 257/292 Ohmi, ; 257/443 Tadahiro ; 257/448, et al. ; 307/117 345/88 ; 345/92 ; 345/98 Current Matthew , et al. Zavracky Inventor U X ß ი B μ. N ω • G

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| | | | | display apparatus with color sequential illumination | Head-mounted | | | | | | - | Image signal processing device | | | | |
| | active matrix display panel. Color stripes are used to generate sequential | region, compressed video information can be directly displayed on the | selectively actuating pixel electrodes in the active matrix display | includes a random access data scanner and random access spec scanners. By | circuitry using single crystal silicon technology. The control electronics | electrodes. The control electronics is fabricated with the active matrix | A color active matrix display system allows random access of pixel | image data. Expanded image | High resolution image data is generated based on the first and second | quantization, and Huffman encoding, and is recorded to an IC memory card. | image data is then subjected to a discrete cosine transformation (DCT), | half the distance between the centers of two adjacent pixels. The first | data is offset from the corresponding pixel of the first image data by | image data based on the same optical image. Each pixel of the second image | An image signal processing device generates first image data and second | |
| •••• | | ••••••• | ••••• | 345/8 | ***************************** | ••••••• | 7. | | | | | 386/109 | | | | Sp. |
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| 21 | 19 | Page 8 |
| Image pickup device in which treceiving element, the drive circuit for illuminating means, and the drive circuit for the light receiving element are on the same chip | Image signal processing device | Title |
| An image pickup device comprises illuminating means for illuminating an object and an image pickup element for picking up an image of the object. An improvement is in that a drive circuit for driving the illuminating means and a control circuit for controlling the driving of the image pickup device are integrated one chip, | An image signal processing device generates first image data and second image data based on the same optical image. Each pixel of the second image data is offset from the corresponding pixel of the first image data by half the distance between the centers of two adjacent pixels. The first of discrete cosine transformation (DCT), quantization, and Huffman encoding, and is recorded to an IC memory card. High resolution image data is generated based on the first and second image data. Expanded image image data. Expanded image | Abstract |
| 250/208 | ce mme e e e e e e e e e e e e e e e e e | Current OR |
| | | Retrieva 1 Classif |
| 250/214.1 Ueno, ; 358/475 Isamu ; 358/482, et | 348/397 348/405 348/405 348/412 386/112 386/124 | Current XRef |
| Ueno, Isamu , et al. | Abe, Nobuaki | Inventor |
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26 25 US 5781164 A US 5751261 A Document ID Kind Codes USPAT 298051 26 USPAT 1998071 21 Sourc e Issue Date Page 8 Matrix display systems Control system for display panels Title structure is removed from the substrate and transferred to a glass substrate using a lift-off and transfer process. Performance is further control apparatus comprises a video interface, a column driver, and dual substrate and transferred to a glass substrate as a single piece. The control apparatus and the active matrix are lifted from a silicon electrodes together as a single monolithic device. The electrodes and the resolutions by fabricating the control circuitry and passive matrix row drivers. The video interface operates the active matrix as a fabricated with the active matrix as a single integrated SOI circuit. The control circuitry are fabricated as an SOI structure on substrate. The A passive matrix display device obtains fast response times and high multiple-frequency scanning display device. The polarities of the display A control apparatus for an active matrix liquid crystal display device is pixels are reversed on every frame...bw...a.molaritx...witch...comolar Abstract 345/87 345/55 Current ဓ္က Retrieva Classif 345/206 Current 345/99 Jeffrey, et al. Matthew , et al. Jacobsen Zavracky Inventor U ຜ ი ъ μ N w . 🗆 4 σ

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| | forming another, adjacent well, and a vertical po | (VVM) with a buried implanted layer for lateral isolation having a first portion below a well, a second portion | Semiconductor device having at least one field oxide area and CMOS vertically | Electronic imaging apparatus haying hierarchical image data storage structure for computer-compatible image data management | Title |
| the field oxide which kills | vertical portion. This structure has a distribution in depth underneath | of a first conductivity type, a second retrograde well of a second conductivity type adjacent the first well, and a BILLI layer below the first well and connected to the second well by a | CMOS vertically modulated wells have a structure with a buried implanted [BILLI]. This structure includes a first retrograde well | An image incident on an image sensor is photoelectrically converted to digital image data and stored on a storage device or medium in a hierarchical form as a file in a directory or subdirectory supported by a disk operating system. In this electronic | Abstract |
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| | | ; 257/351 ; 257/371 ; 257/372 Borland ; 257/372 Borland ; 438/526 John O ; 438/529 |), , , , | 348/231 ; 348/232 K ; 707/100 H ; 707/104 , | Current XRef |
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30 29 US 5867318 A US 5847422 A Document Kind USPAT USPAT. Sourc 0 1999020 8 1998120 12 Issue Date Page Ø Wide-angle optical system parasitic bipolar pixel sensor cell that utilizes the action of the cell to output image data MOS-based active Title azimuth of the field of view of the imaging device. The three paths cells. Image data is collected during an integration period by applying a bearing axis at a bearing angle to the optical axis equal to the width in device, and two lateral optical paths image two lateral format views on a axis images a central format view on the optical axis of the imaging field of view of an imaging device to which it is fitted. A median optical height in elevation respectively greater than and less than those of the An optical system affords wide-angle imaging with a width in azimuth and a this, the image data is read out by raising the gate voltage such that the negative voltage to the gate of the MOS transistor which is sufficient to current associated with conventional bipolar-based active pixel sensor reverse-bias both the source/body and drain/body junctions. Following A MOS-based active pixel sensor cell utilizes the parasitic bipolar reversembiased.....and..the..drain.thods vertical image of the cell to produce a horizontal current in lieu of the action Abstract 359/618 257/291 Current ဓ္က Retrieva 1 Classif 257/290 Chi, ; 257/353 Min-Hwa ; 257/354, et al. 359/419 Cordier, ; 359/431Chantal ; 359/504, et al. Current XRef 359/419 Inventor ч X Ø O ۳ 4 N ω 4 Œ

32 31 US 5879447 A US 5873003 A Document ID Kind Sourc USPAT 9 152 USPAT 1999021 46 Issue Page s Sight line detector, display unit, view finder and unit and camera with Semiconductor substrate such that an average device and its inter-atomic distance of main fabricating method constituent the same display unit Title crystallization energy is applied to the amorphous thin film to perform providing a highly reliable semiconductor device are formed by solid phase A single crystal and a polycrystal having an excellent crystal quality and an a-SiGe, and a p-type a-Si successively, an insulating film is formed, On a transparent substrate are laid down a metallic wiring, an n-type a-Si, inter-atomic distance of the elements in single crystal, and solid phase growth to thereby form a single crystal. In another average element of the amorphous thin film is 1.02 times or more of an There is provided a liquid crystal unit having an on-chip photodetector. and then a transparent electrode is formed to have a light growth at low temperatures. An amorphous thin film is deposited on Abstract 117/8 Current Retrieva 396/51 Classif Current 117/9 Okada, Takako 117/930 , et al. Inoue, Shunsuke , et al. Inventor U S C Þ μ N \Box w 4 U

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| | | | | sentconductor film of low oxygen insulating f concentration The | Semiconductor device having a | , *; | | | | | | mounting them | Semicondu memory de various s | | | ••••••••••• | |
| | provided thereover. In accordance with this structure, oxygen particles | to impurities than the monocrystalline silicon thin film, which is | insulating film preferably has a lower diffusion coefficient with respect | ay be silicon, has an ilm disposed thereover. | substrate, which may comprise a transparent material, such as quartz; or | monocrystalline silicon thin film layer for device formation. A supporting | achieve superior performance by utilizing a low oxygen content | A semiconductor substrate having a silicon-on-insulator structure may | a first terminal connected to said source terminal and a second | source terminal and a drain terminal and a ferroelectric capacitor having | includes a plurality of memory cells each having a transistor having a | microprocessor to store data, wherein said semiconductor memory device | external device; and a semiconductor memory device connected to said | device connected to said microprocessor to send/receive data to/from an | performing various arithmetic processing operations, an input/output | A computer system is characterized by comprising a microprocessor for | |
| | | | | 257/458 | | | | | | ••••••••••••••••••••••••••••••••••••••• | , | | 365/145 | | | | 9 |
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| | | | ; 257/914 | 257/448 Yutaka 257/460 Yutaka 257/463 | 257/443 257/443 257/446 257/446 | 257/347 | | | | | · | | 365/149 Takashim ; 365/207 a, ; 365/207 Daisabur | | | | XRef |
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